Response To Those Who Believe Soy Is Healthy

By Sally Fallon and Dr. Mary Enig

In his Guest Editorial of October 2000 in the Townsend Letter, Mr. Bill Sardi expresses surprise that the "greatest criticism of soy has come from natural health advocates." Yet most of the soy-based products on the market today can hardly be called "natural" foods.

They are produced in factories at high temperatures and pressures and with the help of a variety of chemicals. The soybeans themselves are grown on huge corporate farms, most of which use **toxic pesticides and herbicides.**

And a large percentage of soy foods come from genetically engineered plants.

The fact that these products can be labeled "natural" only demonstrates the power and duplicity of soy interests in America. Dr. Zava is one of many honest scientists who have read the literature and discovered that **soy contains:**

- **allergens**
- **mineral blockers**
- **enzyme inhibitors**
- **hormone modifiers**
- **iodine blockers that interfere with normal thyroid function**

Mr. Sardi says these characterizations are unfair and inaccurate. Like Dr. Zava, we do not repeat "claims" that soy contains antinutrients and toxins; we quote the scientific literature. Propaganda is "the systemic propagation of a given doctrine or of allegations reflecting its views and interests; material disseminated by the advocates of a doctrine."

The promotion of soy as a miracle food has been both systematic and reflective of the doctrine of the food industry-that imitation foods are good for us and traditional foods are unhealthy.

The soy campaign is, in fact, a case study in the use of propaganda to promote commercial interests.

Mr. Sardi misquotes us frequently. We stated that soy was not considered fit

to eat in Asia a few centuries ago (not a few decades ago); we did not "acknowledge that Asians consume 30 times more soy than North Americans." We pointed out studies showing that soy consumption in Asia is actually much lower than claimed-averaging 10 grams per person, less than two teaspoons.

He does not seem to understand our argument that if soy is given as the reason Asians have lower rates of breast, prostate and colon cancer (simply because Asians supposedly eat large amounts of soy), then the same logic requires us to blame high rates of cancers of the esophagus, stomach, thyroid, pancreas and liver in Asian countries on consumption of soy.

The truth is that we don't know exactly why Asian countries have certain types of cancers and western countries have other types. Eastern types of cancers have been attributed to many factors, of which soy consumption is one, **but to claim that soy consumption is associated with lower rates of certain types of cancers while neglecting to mention that soy is also associated with higher rates of certain types of cancer is typical of industry dishonesty.**

Sardi acknowledges that Asians have higher rates of pancreatic cancers in one paragraph, but states that populations that consume high levels of soy exhibit decreased rates of pancreatic cancer in another. We are confused.

Messina did indeed omit the Rackis study in his "exhaustive" survey. In fact, Messina did not include any animal studies on pancreatic effects. The Rackis study showed not only enlargement of the pancreas but also precancerous changes. And why the double standard? Why is it appropriate to use rats prone to develop breast cancer in experiments with soy, but not rats prone to demonstrate disturbances in the pancreas?

It is standard scientific practice to use rats bred to react in specific ways in order to study effects over short periods of time. Normal rat chow did not cause pancreatic changes in sensitive rats-only rat chow based on soy.

Birds don't eat soy, says Sardi. They know better. The Jameses should have known that soy is not appropriate for birds (something that would come as a surprise to the chicken industry.) The Jameses trusted the literature that came with the product, which stated that soy was an excellent food for birds. They also trusted the claims made for soy infant formula, that soy was "better than breast milk."

They should have known that soy was not an appropriate food for humans, particularly for babies and so should Mr. Sardi and all the others out there who continue to provide glib assurances that soy formula is

a good substitute for milk-based formula.

The James learned a terrible lesson the hard way-that we should not trust claims for commercial food products, especially when these claims are too good to be true. In the absence of animal instinct, it's important to be skeptical. "Scientists cannot infer that animal data applies to humans," says Sardi.

But they do it all the time, especially when the data show protective effects. Only when the studies are negative do scientists get reprimanded for using them. Onward with the double standard. It is axiomatic that when a chemical carcinogen is definitely active in one or more animal models, it can be stated with certitude that certain individuals of Homo sapiens would be at risk.

Soy proponents don't want the public to know that phytoestrogens can induce tumors in several different species of animals.

The younger the animal, the more susceptible it is to the action of plant-based estrogens, as it frequently is to other carcinogens. Sardi objects to some of our references.

One of them-Natural Health News published by L & H Vitamin Company-was given as an example of promotional advertising, which in this case claimed that soy could prevent cancer. He complains of a missing citation, number 58, but there is no missing citation. It is published on the website and was published in the Townsend Letter.

Another criticism is that the average published date of our references is 13 years old. We were not aware that averaging publication dates was a valid method for assessing studies and reports. Nevertheless, one of the aims of our article was to show that studies indicating soy toxicity date back as far as fifty to sixty years, especially studies showing adverse affects on the thyroid gland. (Goitrogenic components have been confirmed very recently by Divi and Doerges.)

Much good scientific work was done in past decades and it is work that can be depended upon because it took place before the soy industry began funding university research.

We hope that citation of the following recent studies will make our "average published date" more acceptable:

> A study from Cornell University, published in the Journal of the American College of Nutrition, 1986, which found that children

who develop diabetes mellitus were twice as likely to have been fed soy.

A November 1994 warning published in Pediatrics in which the Nutrition Committee of the American Academy of Pediatrics advised against the use of soy formulas due to the diabetes risk. These warnings have been neglected ever since it was reported that the AAP accepted a multi-dollar donation from the Infant Formula Council for their new headquarters building outside Chicago.

A 1994 article by Lonnerdal published in Acta Paediatr summarizing the reduced bioavailability of trace minerals due to high phytic acid content in soy infant formula; and high levels of manganese in soy formula compared to cows milk formula and breast milk. Excessive intake of manganese is linked to problems with the central nervous system.

A 1996 report published in the German magazine Klin Padiatr describing the development of hypocalcemic tetany in an infant fed soy formula.

Two 1997 studies published in Nutrition and Cancer. One found that phytoestrogens at levels close to probable levels in humans stimulate cellular changes leading to breast cancer; the other found that dietary soy suppressed enzymes protective of breast cancer in mice.

A 1998 study published in the American Journal of Clinical Nutrition further confirming that soy-protein supplementation stimulates cell proliferation in human breast tissue.

A 1998 study published in Cancer Research which found that dietary genistein enhances the growth of mammary gland tumors in mice.

A 1998 study by Nagata and others published in the Journal of Nutrition which gives daily consumption of tofu in Japan's Gifu prefecture as less than 1 gram per day.

A 1998 study published in Toxicology and Industrial Health indicating the phytoestrogens are potential endocrine disrupters in males.

A March 12, 1999 Daily Express article with the headline "Soy Allergy/Adverse Effect Rates Skyrocket - Monsanto's Roundup-

Ready Soy Blamed"

A 1999 study at the Clinical Research Center at MIT, published in the Proceedings of the Annual Meeting of the Pacific Coast Reproductive Society which found that estrogens in soy had no effect on menopausal symptoms such as hot flashes and night sweats.

May 1999 and June 2000 studies published in Brain Research indicating that phytoestrogens have adverse affects on brain chemistry.

An April 2000 study published in Proceedings of the National Academy of Science which found that flavonoids, especially genistein, can cross the placenta and induce cell changes that lead to infant leukemia.

An article published in Nutrition and Cancer 2000 which found lower testosterone levels and higher estrogen levels in Japanese men who consumed higher levels of soy foods.

Publication in the British Journal of Urology, January 2000, of the study showing a five-time greater risk of delivering a boy with hypospadias, a birth defect of the penis, in mothers who ate a vegetarian diet during pregnancy. The researchers attributed high rates of the birth defect to phytoestrogens in soy products.

An April 2000 study published in Carcinogenesis found that soy feeding stimulated the growth of rat thyroid with iodine deficiency, partly through a pituitary-dependent pathway.

A June 2000 article in American Journal of Cardiology which found that soy had no impact on lipid levels in healthy postmenopausal women

Evidence that disturbing results were omitted from a 1994 study presented to the FDA during the approval process for Roundup Ready Soybeans. Researchers found that raw Roundup Ready meal contained 27 percent more trypsin inhibitor and toasted Roundup Ready meal contained 18 percent more trypsin inhibitor compared to non-genetically manipulated controls.

The most **serious concerns** regarding soy foods **involve the use of**

soy infant formula.

Sardi cites a 1998 Nutrition Reviews article by K. O. Klein of duPont Hospital for Children as proof that soy infant formulas do no harm.

Yet in the article Klein notes that effects of isoflavones on various animal species include hormonal changes, increased uterine weight and infertility. " It is clear from the literature," says Klein, "that different species and different tissues are affected by isoflavones in markedly different ways.

It is difficult to know which tissue, if any, are affected in infants, and the variation among species makes extrapolation to infants inappropriate." This is scientific double talk.

Scientists may be reluctant to extrapolate but parents would certainly err on the side of caution if they knew that "isoflavones affect different tissues in markedly different ways." Klein says that medical literature provides "no evidence of endocrine effects. . and no changes in timing of puberty."

But she makes no mention of the Puerto Rican study which found that consumption of **soy formula correlated strongly with early maturation in girls.**

Why would Dr. Klein leave out any reference to the Puerto Rican study in her review? Is it because DuPont, owner of Protein Technologies International, is the leading manufacturer of soy protein isolate?

Or is it because her review was sponsored by the Infant Formula Council? Or because Nutrition Reviews, which published her whitewash, is funded by industry giants, including Pillsbury, Hershey Foods, Kellogg, Roche, General Mills, Kraft, Campbell Soup, Monsanto, Coca-Cola, Cargill, Heinz, Nabisco, Proctor and Gamble and Pepsi-Cola?

Soy can be implicated as a probable cause in the current epidemic of learning disabilities because it has similar effects in monkeys. Sardi is correct in stating the 1997 Journal of Pediatrics article makes no mention of soy. Neither does Time Magazine in their recent article on early puberty in girls.

The Time article speculates that exogenous estrogens might be the cause. Is it not appropriate to speculate that estrogens in soy formula, which are not "reduced significantly by their first pass through the liver" as Sardi claims but end up in the blood of infants in huge amounts, might also be a cause?

Perhaps it is the hormones in meat and milk, say the writers of the article.

But hormonal levels in these products are minuscule compared to levels in soy formula. And in the Puerto Rican study, consumption of milk was negatively correlated with early maturation, which means that it might be protective.

We do not claim that Asians have lower rates of osteoporosis-it is the soy supporters who make that claim. But if in fact they do have lower rates of bone loss, it is much more likely due to factors in the diet that are consumed in large amounts and that provide vitamin D and calcium, such as bone broth, shrimp and lard.

We are aware of new research indicating that consumption of vitamin D is optimal at 4000 IU per day, not the RDA of 400 IU. This research is an excellent confirmation of the work of Weston Price who found that the diets of healthy primitives peoples had at least ten times more vitamin D than that of the average American of his day. (Sunlight will not provide adequate vitamin D unless a large portion of the skin is exposed during the summer months or in tropical latitudes.)

The textbooks do indeed need to be rewritten to stress consumption of vitamin-D-rich animal foods and to minimize consumption of foods that increase our requirements for vitamin D-like soy. Shrimp sauces and shrimp pastes used in Asia and Africa are made from dried shrimp, hence very concentrated.

They are eaten daily, often at every meal and could be expected to provide vitamin D in amounts greatly exceeding vitamin D intake levels in the US. The vitamin D content of butter varies with the feed of the animals. Butter from cows on green growing grass is likely to provide far more vitamin D than butter from cows in confinement. We advocate consumption of butter from pasture-fed animals (and eggs, lard and other animal foods for the same).

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